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WATER PROBLEMS OF NEW OHIO TURNPIKE SOLVED BY DRILLERS

Fig. 4700

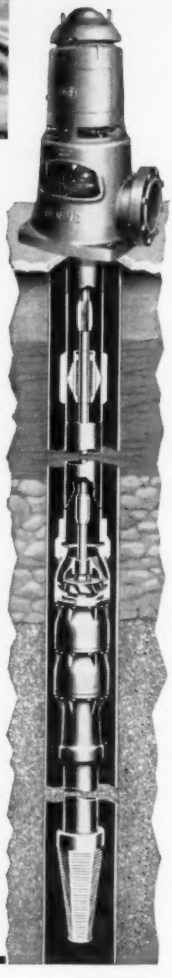

Fig. 6700

and DEMING PUMPS

Beyond reach of city water mains, the new Ohio Turnpike presented numerous problems of water supply and disposal. Near the Eastgate section, a portable cement-mixing plant required 40,000 gallons of water daily. Deep wells were drilled and equipped with Deming Vertical Turbine Pumps (Fig. 4700 illustrated at right).

Water supply for toll stations required an average daily volume of more than 7,000 gallons per station. More deep wells were drilled and equipped with Deming Submersible Pumps (Fig. 6700, illustrated at left).

In foundation-level basements at various interchange points, power cables had to be protected against run-off rainfall and other water hazards. Deming Vertical Sump Pumps equipped with float switches and high water alarms were installed to prevent costly damage to cables.

This Ohio Turnpike project points up the advantages to well drillers installing Deming Pumps. Regardless of the needs for pumps, the complete Deming line *"covers the waterfront"*.

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THE DEMING COMPANY
512 Broadway
Salem, Ohio

The Driller

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October 1955

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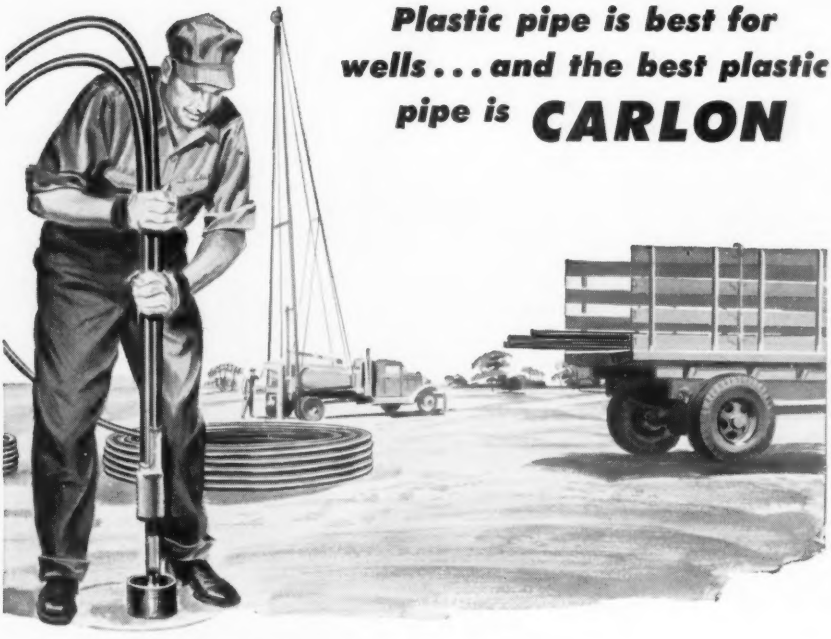

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'Lower' Ideas for Higher Efficiency

R. E. Lower's rigs always have a month's work ahead, but hard drilling has been eliminated by ingenious changes which make things easier. These changes add up to better footage, too.

by Ray Day

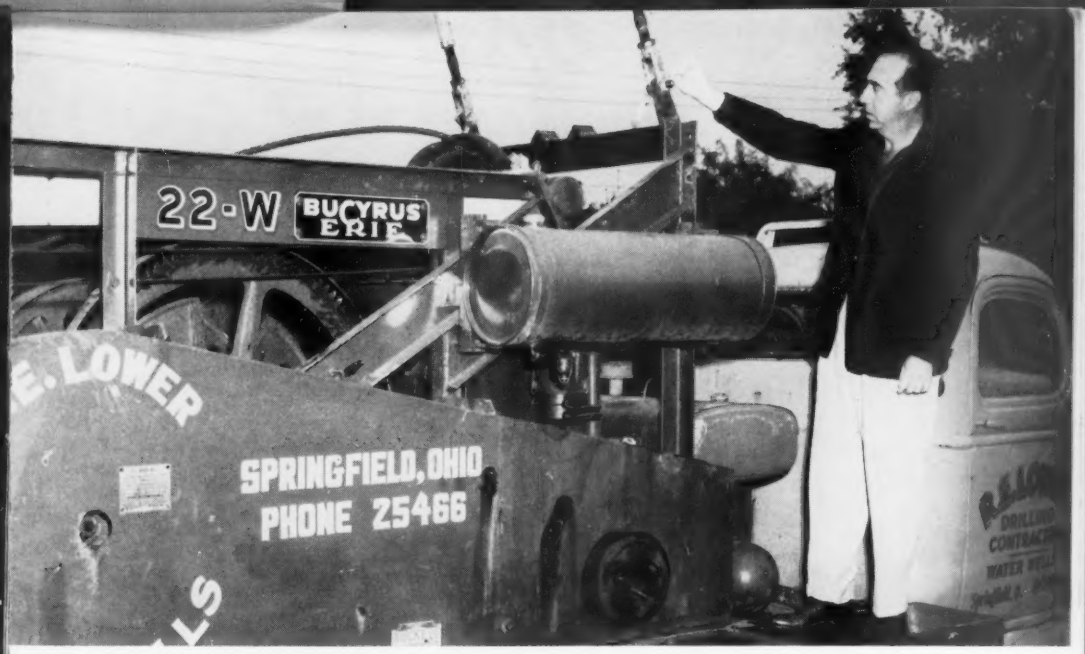
OF all water well drillers in the United States, few do their work any easier while making money than the men who run R. E. Lower's Bucyrus-Erie machines in Springfield, Ohio.

Lower, whose father, Vernon, drilled wells in the Springfield area nearly half a century ago, believes in doing things the easy way. It lets a drill work steadier, saves a driller's time, and promotes safety. Most of Lower's innovations are small ideas, but they add up to several more feet of hole every shift.

Operating in a 50-mile radius around Springfield, these Ohio drillers frequently sock a 65-ft. well down in eight hours. The little refinements which have helped them do this include minor modifications to the 20-W and the two 22-Ws, which the men operate under Lower's name. A natural-born champion of mechanical efficiency, Lower simply spotted a few of of the things likely to cause his drillers waste motion, and then corrected them.

One of the things, for example, was the inability of the driller to make the ignition system on the drill motor foolproof. After several cases of vandalism that could have been serious, Lower solved the problem once and for all by tying the drill engine's ignition system to the switch on the International truck panel which carries the machine. When the operator crawls into the cab, inserts the key and turns it to the left, the igni-

Part of Lower's fleet of vehicle equipment is shown lined up in front of the company's Springfield (Ohio) combination garage and shop headquarters.



These small welded extentions on the nuts holding the 22-W's bracing in position have practically eliminated the need for wrenches out on the job.

tion is on for the drill motor. In this position, the engine can be started from push-button controls at the operator's platform at the rear end of the machine. When the switch is turned to the right, only the truck engine can be started. With the switch in off position, neither the truck nor the drill will start.

Lower has made other important additions, too. On one of the 22-Ws he has mounted a Lincoln arc-welding machine, arranged a small but neat and adequate storage rack for wrenches and other tools, and by moving the storage battery to a common point where it serves both the truck and the drill motor, he created a natural storage place for his arc-welding cable. On this same machine, as on his other rigs, he built a small protective plate which protects the cab from being rubbed by the drill cable when the derrick is down.

The modification which Lower is probably most proud of is a simple little trick he pulled in changing the lever direction in raising the masts of his machines. The machine, as it leaves the factory, has a derrick raising lever which must be lifted up to raise the mast. Lower simply took this lever off and put another one on leading in the opposite direction, so that it came up through a steel-grating walkway around the deck of the machine. It was then possible to raise the mast by pressing down on this lever with a slight pressure of the foot. Located up on the walkway during the mast-raising process, the operator now finds himself in position easily to see anything which might be going wrong.

Another source of wasted time, according to Lower, was the method of securing heads on the bolts which tie the derrick bracing together. The usual method, as any driller knows, is to fasten these nuts with a crescent

A Lincoln welder and a neat rack for drilling tools and wrenches was built up behind the truck cab on the machine carrying the 22-W drill. The result is a neat, orderly arrangement away from the controls of the rig.

wrench. If a wrench fell down through the drilling machinery, there was always lost time until it could be recovered. Lower and his men solved the problem neatly and efficiently by welding short, permanent wings or levers to the side of each nut. The wings were made just long enough to do the tightening job, still allowing the necessary clearance for the nut to be screwed tight. The idea has worked well and saved a great deal of time.

Lower emphasizes that these changes were made not because of any inherent deficiency in the equipment. It was simply a case of making minor refinements which did help to pick up a few extra feet of drilling per shift.

The Lower name was firmly established in the well drilling business many years ago when Vernon Lower operated machines in the territory. R. E. Lower took over the active management of the business about 1939, continued the fight to do the necessary job through the war, and has built up steadily ever since. Today the firm owns, in addition to the three rigs, six trucks, a bailing rig, and a repair shop complete with lathe, acetylene gas generating equipment, oxy-acetylene equipment, arc-welding equipment, heavy-duty tools, and a pipe threading machine capable of taking pipe up to 12 inches in diameter. The latter has been especially useful in threading and jointing pipe in the proper manner so it will stay together under almost any condition.

After making a careful and rather extensive analysis of the water well business in his territory, Lower settled down to a definite policy of drilling primarily domestic wells, either for domestic water or air conditioning. Lower also does some industrial water well development, drills an occasional larger diameter irrigation well, and occasionally sells and installs pumps. He has made a general policy, how-

ever, against bidding on large industrial or government agency jobs, chiefly because his equipment and drillers can stay busy the year round supplying the smaller domestic demand. There is hardly a time during the year that there isn't a month to six-weeks backlog ahead of the machines. The only slack time is during the worst part of the winter, and it is then that Lower himself takes a short vacation from operating and leaves the remaining work to his drillers.

Central Ohio, around Springfield, is an area once traversed by a moving glacier. In drilling a few of his wells east of the city, Lower has succeeded in checking quite accurately the geological reconstruction of that part of the country. There is one place, for example, where the moving glacier gouged out a 300-ft.-deep channel through the heart of native limestone common to this region. On several occasions, good wells have been brought in under 100 feet up on the shelf of this limestone, while just a few hundred feet away where the gouge was made, drillers have to go 300 feet deep and more to bring in good water.

Most of the underground fresh water in this area is found in limestone crevices. According to Lower, he is practically certain to develop a good water well if the machine is set up close over a good solid limestone formation. Shale is the poorest water producing formation in the Springfield vicinity. There are fairly heavy deposits of sand, gravel and clay strata. Under average drilling conditions, Lower's 22-Ws can drill from 40 to 50 feet of 5-in. hole per eight-hour day in gravel, from 30 to 40 feet in hard limestone, and from 60 to 70 feet in shale.

The usual type of well put down by Lower's drillers is a domestic well 5⅝ inches in diameter and about 75 feet deep. His drillers have on occasion put down domestic wells as deep as 550 feet, and have done repair or corrective work on wells much deeper than that. His toughest drilling problems are in large, hard, gravel particles and tough bolders which invariably are found just above bedrock. It is in these places that a driller must be especially careful.

Lower cases his wells through sand, overburden and other unstable formations, and develops his main water supply far down in the clean limestone.

As a general rule, the drilling in these formations—excepting shale—

Early on Monday morning before his drillers had arrived on the job, Lower was out at this well setup near Springfield, Ohio, checking over his newest machine: a Bucyrus-Erie 22-W shown set up over a well out in the open.

is relatively easy. A medium to heavy tool string, with the addition of drilling jars, will penetrate even the hardest of the limestone rock, and even the shale can be drilled rapidly if reasonable care and a somewhat flattened bit is used. All drill bits are sharpened in Lower's machine shop, where an oil-type heating furnace is installed. The bits are finished off with a fairly well pointed penetrating edge, a good wearing surface, and a fairly large watercourse for limestone and other hard drilling.

Lower has imported to his drilling business a sharp business sense. It all started out several years ago when Lower felt interested in the welfare of a few good drillers who were at that time on his payroll. There were several flaws in the system then used —in which the men worked for wages —not the least of which was the enormous amount of book work necessary to keep the time, Social Security, old age benefits, and other figures up-to-date.

Lower is the type of man who constantly searches for new or different ways of doing a job. In this case, he cut through all the red tape by devising a labor contract for each of his drillers. The drillers are free to use Lower's drilling equipment in the bargain. In some cases the drillers furnish their own pickup trucks, and that has eliminated one of the worst headaches of well drilling: damage to these vehicles.

When the men own their own pickup truck, they are naturally much more careful in its operation than they might be while operating the company-owned vehicles.

Lower has gone to each of his men and emphasized the importance of giving each drill the type of preventive maintenance service recommended by the manufacturer. Since Lower's drilling machinery represents these men's basic living, they have cooperated well, and the result is a trouble free, harmonious business re-

With the Lower 20-W, this free flowing well was developed by the drilling crew. It is one of many such wells brought in by the Lower firm.

R. E. Lower points out how he moved the engine starting button to the rear end of the machine where it would be handier. The ignition system then was tied to the truck switch so when truck engine is off, the drill engine is off too.

lationship which is profitable to Lower and his drillers alike.

Lower has cooperated with his drillers in several other ways, too. For example, during the rare time in the dead of winter when work tapers off some, it is he who gets off the machine and lets his drillers continue to make a living. By eliminating much of the bookkeeping and other red tape and confusion surrounding the normal drilling business, Lower has brought it to the point where he can readily get away for several days almost anytime he wishes. He can even take Mrs. Lower and their four-month-old son along, because a repeater telephone has been arranged so that any telephone messages during each day can be relayed to one of the drillers who will then check on the jobs in an emergency and give a bid figure.

The Springfield driller has business sense in other ways. Not long ago, for example, one of the largest subdivision developers in the area built a large number of residences over a particularly tricky area where the drilling was tough and water results were somewhat uncertain. Lower let the work start and made no attempt to bid for drilling the necessary domestic wells. One by one his competitors moved in and practically beat their rigs to pieces trying to get down to water bearing limestone. With the building project in its final stages, the developer finally got so disgusted that he invited Lower to come in with his 22-Ws — which were heavier and much more powerful than those his competitors were using. Lower did the final part of the job speedily and successfully, making just a little profit. But the developer was so favorably impressed with his performance that Lower has taken practically all this man's work since, in much easier formations. It was one of the wisest business investments he ever made.

Another time recently, a man who had tried to save money by hiring a price-undercutting driller with light equipment found himself in trouble when a considerable amount of sand and dirt showed up in the bottom of his well. After much cogitation and cussing, he arranged for Lower to come out and make an inspection. Lower diagnosed the trouble correctly by assuming the lighter equipment which had done the job wasn't heavy enough to drive the casing into solid material. The sand from the overbur-

(Continued on page 44)

Britain's Oldest Town Water Supply

Five years ago Southampton (England) workmen dug up a wooden water pipe which was constructed from a solid elm trunk. Experts identified it as a 150-year-old section of the municipal water system, which dates back to the late 13th century.

by Anthony Brode

SOUTHAMPTON, England, is Britain's busiest passenger port. It also has the distinction of possessing the oldest municipally-owned water supply in the United Kingdom.

Two rivers, the Test and the Itchen, converge into Southampton Water; the docks and town grew up on a tongue of land between the two, where harboring is naturally deep and sheltered. The land rises gently northward behind the town and there are many natural springs.

One is the fountain of Coldwell, which 700 years ago belonged to Nicholas de Barbeflet, lord of the manor of Shirley, now an important residential part of Southampton. Nicholas gave it to a community of monks, the Friars Minor, in 1290, and the fountainhead they built still exists. A record of the time says that the spring produced "a great plentie of swete water," and Joseph Hawksley, Southampton's current water-

The name "Water Lane" reminds passers-by of the antiquity of the stone-built waterhouse erected in 1310 when the monks piped the supply from Coldwell to their church a mile and a half away. In 1420, the monks gave it to the town.

works engineer, found it was producing 1,500 gallons a day when he measured it three years ago.

The building put up by the Friars ("le conduit hede" is its name in old documents) has three chambers of which only the outermost one is above ground. This is circular, with a domed roof. Next is a rectangular chamber with a vaulted roof and stone slab shelves—"a refrigerator or a mortuary" is Hawksley's guess—and, beyond a 10-ft. tunnel 3-ft. high and 3-ft. wide. The spring rose in an oval inner chamber which has a slab roof supported by stone beams.

Its output was taken in lead pipes for half a mile to a waterhouse—built of stone, and still standing—which the monks put up in 1310. Until a century ago, when it was channeled away into an underground stream to join Southampton water beneath the new section of the docks, the flow was taken another mile to the old walled town, where the friars had a church in the southeast corner. They allowed the townspeople to use a cistern in the main street—a slight measure of improvement over previous water sources.

The water had a good reputation. In 1415 several hundred barrels of it were loaded to the invasion fleet of King Henry V when he set sail to fight the French at Agincourt. Water from Southampton was also taken aboard for troops in a later invasion of Normandy. That was for D-Day in 1944, when the town was a major United States armed forces port of embarkation.

In 1420 the monks handed over their system to the mayor on condition that it was to be kept in good order and that the inhabitants should have free use of the water. Thus began the first British-owned water supply on record.

Wild flowers grow over the dome-shaped outer chamber of the conduit head built by the monks in 1290 above the Fountain of Coldwell. Only modern touches are the stone slab over the entrance, the iron grille, and the lock.

As the town grew, more springs were incorporated into the system and in 1565 a sluice-gate was controlling the supply almost where Southampton's biggest movie theater now stands. Shallow wells were dug, but in some cases the water was reckoned impure even by the standards of those days. And living conditions in the 16th century were a far cry from today's sanitary state.

Fire risks were also a problem, and parishes were liable for a fine of two pounds sterling—a hefty sum at the time—if they failed to keep their wells in good condition, properly

railed, curbed and covered, with a sound bucket handy.

Five years ago Southampton workmen dug up a 30-ft. long wooden water pipe weighing about a ton and constructed from a solid elm trunk.

Experts said it was a 150-year-old section of the municipal water supply. Records show that the only local man with the necessary gear to make such a pipe — the bore tapers from four to six inches — was a Southampton man who invented the circular saw. His name: Robert Taylor!

Medicinal Value

Tudor well-tops are still in existence in Southampton. One may be seen by visitors to the garden of Tudor House, one of the town's fine museums. But it was not until Georgian times, when the place regained as a spa some of the prosperity it had known as a port three centuries earlier, that water came into the news again. Fashionable people flocked to "take the waters" for their medicinal value; one spring was supposed to be particularly beneficial for disorders of the eyes. Spa Lane and the Spa Tavern still exist as reminders of the days when Southampton was an elegant boom town for the British aristocracy. Many relics of Georgian wells have been discovered in the last ten years as the center of the town, leveled by German bombers in 1941, was being rebuilt. They varied in depth from 15 to 25 feet, and several of these comparatively ancient wells contained almost six feet of clear water.

The municipal water system was considerably extended during the last century when the docks began to flourish again as the result of expansion plans by railway interests. Two reservoirs for spring water were built on Southampton Common, a large wooded area which overlooks the port. This tree-covered territory is owned by the people of Southampton.

In 1851 a pumping station and sedimentation reservoir were constructed where the River Itchen enters the borough. The water from the pumping station was pumped to the Common reservoir.

In 1883 a well was sunk to a depth of 563 feet; below this a further boring was made to a total of 1,317 feet. The cost was $56,000 but the well failed to produce the expected supply and was soon given up as a bad venture. It was then a matter of finding a new drilling site.

Five years later wells were sunk in the chalk farther up the Itchen, near the village of Otterbourne. It is on the development of its Otterbourne Waterworks that Southampton has chiefly depended during the twentieth century for the enlargement and improvement of its 600-year-old water system.

Special Intake

The water used by the townspeople, and by the trans-atlantic passengers who sail from the old port, is now taken from the Itchen through an intake specially designed not to draw in the river's famous fish. The rate of flow is two inches of water per second past a fixed point in the intake pipe. The maximum pumping rate is 10 million gallons per day through the pipe which is 108 sq. ft. in cross section.

Considering their traditional appreciation of Hampshire trout, the monks who built the original conduit head would probably have been surprised at this rather elaborate precaution!

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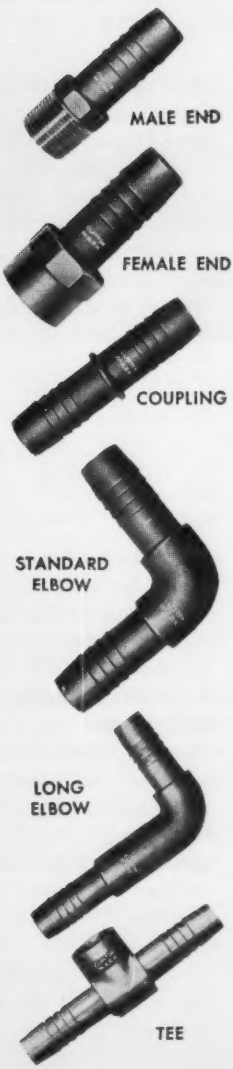

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From the State Capitals

An impartial monthly analysis of state and municipal legislative and regulatory trends of nationwide significance. Prepared by Bethune Jones.

Legislation aimed at providing new water supplies and developing and conserving existing water resources received widespread attention in the states this year. A summarization of current and prospective trends in this field, as reported from state capitals and cities throughout the country, follows.

California

Some of the bills dealing with the water problem which failed in the 1955 California legislative session, included proposals to: provide state backing for local water projects bonds; enable the establishment and management of ground-water replenishment districts; and establish water rights of southern California to water which may be imported from the north.

Colorado

The legislature authorized Denver's outlying counties to form water districts and negotiate for their own water supplies. The new law also authorizes districts to finance water development with bond issues, after approval by the voters. Districts formed under the act will have eminent domain powers.

Rejected by the legislature were bills to set up a state ground-water code and to give the east and west slopes equal representation on the State Water Conservation Board.

Main effect of the defeated ground-water code bill would have been to extend Colorado's legal doctrine of water priority, according to date of appropriation, to include underground waters.

Florida

The legislature created a commission with a $48,000 appropriation, to study water resources and report to the 1957 session.

Georgia

Establishment of a basic water policy for Georgia, with the state assuming responsibility for water use and development regulations has been submitted to the State Water Laws Revision Commission, an interim study group, by the Georgia Water Use and Conservation Committee.

Other recommendations by the water conservation group, which were taken under consideration by the state revision commission, included:

That raw water laws protect existing vested rights to the beneficial use of water.

That the administrative unit be empowered to explore the needs for compacts and agreements concerning Georgia's share of waters and watercourses, lakes and ground-water formations. This would be where part of such waters are in territorial limits of neighboring states.

That the administrative unit start

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lowest priced... longest profit

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MODERN-WOODMANSE

2 GREAT NAMES... NOW ONE FOR PROGRESS!

This is it! The newest member of the M-W family—backed by nearly 100 years of engineering know-how.

It's low, low in price, and . . . from Modern-Woodmanse . . . another bonus! The longest discounts ever given in this category. You enjoy larger volume sales *plus* bigger profits, not smaller ones!

This Modern-Woodmanse wonder pump is water-cooled and water lubricated. It's absolutely noiseless—and it can be taken down completely, and serviced on the job!

There's no priming. It's frost-proof, tamper-proof and trouble-free. We test run every pump before it's shipped!

We'd like your business. And this highly efficient pump should *earn* it. There's a full line of great new models, each with the lowest price on the market today. Each with 1-year warranty. *Send for literature and prices today.*

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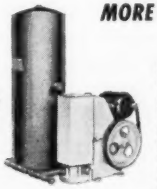

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DEEP WELL SYSTEM. Improved throughout! Has aluminum enclosed weather-proof pump head for easier, lighter handling; removable bearings; heavy-duty double gears; self-oiling feature. Here is the perfect pump for sandy or weak wells where submergibles fail! Finest high capacity deep well system made, and the easiest to service.

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Sales Division George Getz Corp. Dept. TD, West Chicago, Illinois

as soon as practicable preparing inventories of present and potential use of water resources in co-operation with public and private users and others.

That initial legislative proposals establish an objective for maximum beneficial uses of water, recognizing that encouragement of orderly development, conservation, wise use and protection of land and water resources serves the public interest.

Idaho

A measure ratifying the Columbia River Basin Interstate Compact was adopted by the Idaho legislature.

Rejected was a bill which would have forced local ground-water boards to render a decision within 20 days following a hearing and hold up execution of action by a watermaster or one of the local water boards pending an appeal.

Indiana

The legislature created a commission to study both ground and surface water conditions and report its findings and recommendations to the 1957 session.

The act also declared surface water to be a natural resource, subject to regulations which could not be applied under the former riparian rights status. Establishment of regulations over surface and ground water, however, was left to the next legislature.

Missouri

State Senate adopted a resolution calling for a broad study of water use problems. It asked that a committee of five senators, aided by the state geologist, the Division of Resources and Development and the staff of the State Legislative Research Committee, conduct the study and report to the 1957 session.

Montana

The legislature rejected bills to set up new codes for ground and surface water. One bill would have set water rights on unadjudicated streams and provided for appointment of water commissioners to handle the rights of irrigation.

The other defeated bill would have set up a ground-water code to control well drilling and use of water across the state. It would have been administered by the state engineer.

Nebraska

A state legislative resolution asked the State Legislative Council to make an interim study of the state's ground-water problems to determine whether new legislation "is necessary or advisable."

Nevada

The legislature revised the state's ground-water laws to tighten requirements for well drillers and to give the state engineer wide powers in connection with well drilling.

It was explained during legislative discussion, however, that the bill was written so as to be unlikely to interfere with private parties drilling for domestic use.

New Hampshire

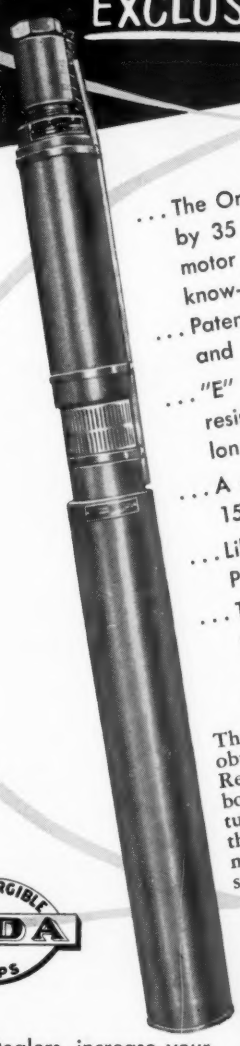
An appropriation of $10,000 was granted by the legislature for a study of ground-water resources of the state's seacoast region.

New Mexico

The legislature created a commission to make a full inventory of the

(Continued on page 26)

ONLY REDA SUBMERGIBLE PUMPS GIVE YOU THESE EXCLUSIVE ADVANTAGES



... The Original Submergible pump backed by 35 years of submergible pump and motor manufacturing experience and know-how.

... Patented 2-wire system cuts installation and maintenance costs and power bills.

... "E" type pump bearings insure greater resistance to abrasive damage and longer life.

... A complete line in sizes from ⅓ H.P. to 150 H.P. for 4", 6" and 8" wells.

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... The finest and most efficient submergible motor sealed against entry of foreign material from the well and oil lubricated for life.

These extra advantages are *exclusive features* obtained *only* with Reda Submergible pumps. Reda manufactures the complete pumping unit, both motor and pump in its modern manufacturing plant at Bartlesville, Oklahoma. More than half of all submergible pumps sold are manufactured by Reda. These outstanding submergible pumps are tried and proved.

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Drillers — Dealers, increase your pump sales and handle this profit making line. Write TODAY for details.

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BRANCHES: Midland, Texas — San Antonio, Texas

"TWIN"*

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Rapidayton Champion

Only "package" Jet Water System that pumps from 0 to 140 foot depths!

Two Impellers!
Pumps *Full Capacity* at 40 lbs. Pressure!

Pumps with a single impeller lose 30% to 80% of their pumping capacity at 40 lbs. pressure . . . but not the new "TWIN". Second impeller plus "Quad-Volute" design *holds* full capacity at 40 lbs. to meet "modern living" requirements.

Model 50CT-CT40S-T13

You owe yourself a good close look at one of these revolutionary Rapidayton "TWIN" Champions soon. There's a new high in simplicity and efficiency of design, a new low in price. What does it mean to you?

It pumps water from greater depths (down to 140 feet) and pushes it farther and higher (extra-high pressures)—it'll deliver full capacity at 40 lbs. pressure (not the 30% to 80% loss of one-impeller pumps)—it's easier and faster to install—it's available in a full group of *convertible* models for deep or shallow wells—and you'll have the lowest prices (with full trade discount, of course).

These are just highlights—your Rapidayton Wholesaler has all the details. Call him!

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"Hot-'n-Cold" Water Systems • Cellar Drainers • Water Softeners

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"modern living" requirements.

Complete ½ H.P. "Package" Water System—only

$159.50 retail (f.o.b. factory)

for pumping depths down to 110 feet.

Only $136.50 retail for pump with ejector and foot valve, without tank. Only $174.50 retail for ¾ H.P. "Package" system for pumping depths down to 140 feet.

True Convertibility! Faster Installations!

Same pump works on deep *or* shallow well by changing position of ejector—no extra pump parts to buy. "Quick-Connect" flange for faster installations eliminates threading, clamps, adapters, unions and slip couplings. Plastic or steel pipe *slides* into pump for fast, easy hook-ups.

(Continued from page 22)

state's water resources and to take steps to protect, conserve and develop water systems.

Also enacted was a bill to allow irrigation projects to take advantage of federal aid.

North Carolina

The legislature created a State Board of Water Commissioners with emergency powers to divert water and charged with conducting a study of the state's water resources.

North Dakota

The legislature acted to maintain drainage systems and protect the rights of underground water users.

A new law gives county drainage boards the duty of seeing that drains are maintained. This previously had been the job of county commissioners.

Duties of drainage boards were more clearly defined by the new law, and they were made more independent of county commissioners.

The legislature also empowered the State Water Commission to issue water rights permits for municipal, irrigation and industrial uses. Heretofore there was no provision giving the use a priority. The commission, under the new law, will draft rules and regulations to define the specific priority.

Milo W. Hoisveen, secretary and chief engineer of the State Water Commission, said users of underground water for domestic purposes, stock watering and municipal use would continue to have the highest priority.

Oregon

The legislature enacted a new statewide code covering the appropriation and use of ground water. It replaces a former law which applied only to that part of the state east of the summit of the Cascade mountains.

Holders of so-called water rights are particularly affected by the new law, which gives such persons three years within which to file registration statements in the state engineer's office presenting their claims for these vested rights.

All new appropriations of ground water, under the new code, must be covered by permits issued by the state engineer.

As to registration statements covering vested rights and applications for permits, the law exempts wells for stock watering purposes, for watering any lawn or non-commercial garden not exceeding one-half acre in area, for single or group domestic purposes in amounts not exceeding 15,000 gallons daily or for any single industrial or commercial purpose not exceeding 5,000 gallons daily.

The new code also provides for licensing of well drillers by the state engineer's office.

South Dakota

The legislature enacted new laws subjecting the state's ground and surface laws to the doctrine of beneficial use.

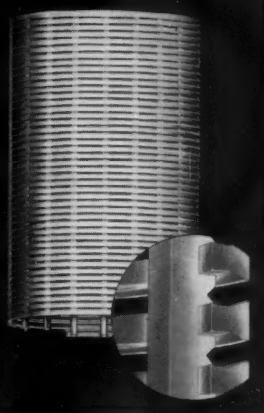
Proclaiming that "the general welfare requires the water resources of the state be put to beneficial use to the fullest extent of which they are capable," the legislation provided for the creation of a new commission composed of seven members representing the different groups of water users. The new agency is vested with authority formerly exercised by the state engineer.

As to ground water, the new com-

Contractor R. J. Strasser (right) and Alcoa® engineers inspect 5000-gpm flow. With 18-inch Cook Strainer, well has 3½-foot drawdown. Static level is 22 feet.

® Aluminum Company of America

A COOL 7 MILLION A DAY



That's what this well, equipped with a 40-foot Cook Wire-wound strainer, produces for cooling purposes in many phases of aluminum production at Alcoa's Vancouver, Washington, plant. Because so much production capacity depends on a continuous flow of fresh well water, a Cook Well Strainer was installed to insure maximum flow for many years to come. Cook Strainers have an exclusive V-shaped self-cleaning slot that prevents clogging and guarantees maximum delivery. Wire-wound or brass tube types are available in all slot sizes from .006 inches to .25 inches, fabricated from Red Brass, American Everdur Bronze, Armco Iron, or Stainless Steel.

Eight to 24-hour delivery is often possible. Call Cincinnati MUlberry 1-1800 for this service, or write for specifications.

World's Leading Name In Well Strainers

COOK WELL STRAINER CO.

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Frank Acker

Frank Acker, 69, of Hales Corners, Wis., died Aug. 27 at his home after a three-month illness.

Until 1953, Mr. Acker operated the drill firm of Frank Acker & Sons. He had been in the water well drilling business about 30 years, putting down water wells in the Milwaukee area, of which Hales Corners is a suburb, during all that time.

He is survived by his wife, Sarah; five sons, Myron, Earl, Harvey and Clarence, all of Milwaukee, and Adrian of Clearwater, Fla. Mr. Acker trained each of his sons to be drillers, and each of them has had his own drilling business.

Services were held at St. Mary's church in the town of Greenfield. He was buried in Holy Assumption cemetery, St. Martins, Wis.

mission will be able to "control the location and capacity of irrigation, industrial, municipal and other large capacity wells for the purpose of insuring or protecting water for domestic use."

Wisconsin

Representatives of eight Milwaukee suburbs have taken preliminary steps toward a referendum which would create a suburban water system.

Such a referendum may be held next spring. Meanwhile, a committee will study financing of the project, expected to cost more than $11 million. Communities involved are Wauwatosa, Whitefish Bay, River Hills, Brown Deer, town of Granville, Bayside, Fox Point and Glendale.

Wyoming

A study of the problem of legislation controlling ground-water use is being made by a subcommittee of the State Legislature Research Committee, which will report its findings and recommendations to the 1957 legislature.

Although nearly all interested parties agree on the need for a new ground-water law, there is considerable divergence of opinion as to how to proceed.

About all Wyoming now has in the way of ground-water regulation is a law requiring that a person must register a well after it has been drilled. The legislature this year rejected a bill which would have required all persons digging wells for irrigation purposes to apply to the state engineer for a permit.

New Package Unit for Cresline Plastic Pipe

Cresline 75 pipe is now available on a convenient disposable cardboard reel in sizes ½- to 1¼-in., according to an announcement by Crescent Plastics, Inc., Evansville, Ind.

Eight advantages of handling and stocking packaged pipe are claimed by the manufacturer. For more information, write the company at 955 Diamond Ave., Evansville 7, Ind.

Jacuzzi Opens Dallas Factory Branch

Jacuzzi Bros. Inc., manufacturer of pumps and water systems, an-

the pump pipe that's PROVED!

Don't take chances on untried imitations. Be sure to install the original plastic pump pipes designed, tested and guaranteed by Yardley.

Over 23,000 Twin-du-it installations last year.

Twin-du-it and Sub-du-it are made of 100% pure Polyethylene supplied by DuPont and Bakelite. Use them exclusively and be *sure!*

Twin-du-it

The 2-in-one, web-joined pipe for jet pumps. Stocks, handles and installs like a single pipe. Perfect alignment, no forcing, pinching, binding. Individual top pressure ratings on *both* pipes.

Bulletin 222.

Sub-du-it

Install submersibles as fast as jet pumps. Built-in, braided stainless steel cable tested to 960 lbs. No stretch, fewer fittings, faster assembly in the shop or on the job. Field-tested by 50,000 on-and-off cycles.

Bulletin 211.

ClearStream PressuRated

FOR TRANSMISSION LINES gives you the same working pressure and safety factor in every size.

Bulletin 36

Yardley Plastics Company
142 PARSONS AVE., COLUMBUS, OHIO

IN CANADA: Daymond Co., Ltd., Chatham, Ont.
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nounced the opening of its Dallas (Texas) factory branch. The new plant will serve as the firm's operating headquarters for the southwest area.

B-E Appoints 3 New Water Well Distributors

Three new distributors have been appointed by Bucyrus-Erie Co., South Milwaukee, Wis., to handle the firm's complete line of water well drills. They are Cable Tool Supply Co., Princeton, Ind.; Well Driller's Supply Co., Inc., Chamblee, Ga.; and Wilson and Beemer Supply Co., Ames, Iowa.

These new distributors will sell and service Bucyrus-Erie's 20-W, 22-W, 60-L and versatile, new 1-W drills in their respective territories. In addition, each will offer drilling and fishing tools and will carry adequate parts stock.

Cable Tool Supply Co. is located just east of Princeton, Ind., on highway 64. Their territory includes portions of four states — the southeast corner of Illinois, southwest corner of Indiana, western half of Kentucky and east central portion of Tennessee. Henry C. Neely, whose wide range of experience was gained through his many years as a Bucyrus-Erie district drill sales representative in Evansville, Ind., will be ably assisted by William J. Wheeler, a veteran of years in oil drilling work.

Well Driller's Supply Co., Inc., has the Georgia territory north of and including the counties of Harris, Talbot, Taylor, Peach, Houston, Twiggs, Wilkinson, Johnson, Jefferson, Burke, Jenkins and Scriven. Business will be carried on from the facilities located at 5236 Peachtree Rd. and Pierce Drive in Chamblee.

Iowa, except for the counties of Scott, Muscatine, Louisa, Des Moines, Henry and Lee, is the territory to be served by Wilson & Beemer Supply Co. from their shop at East 3rd St., 2 blocks north of highway 30 in Ames. The shop will open about Nov. 1.

Partner R. Guy Beemer brings a wealth of drilling "know how" to the organization acquired during his 43 years as a driller along the Iowa-Minnesota border.

Clayton Mark Announces Three-way Jet

Clayton Mark & Co., Evanston, Ill., announced the Mark 3-Way Jet which features three-way adaptable jet bodies.

According to the manufacturer, three depth choices from one basic pump are available instead of the conventional two. By selecting the correct combinations of jet venturi and nozzles, high capacity is available at any desired pumping level.

Complete water systems in all tank sizes are available with the new system.

Layne & Bowler Bulletin Covers Vertical Turbines

Vertical turbine pumps for industrial and municipal primary water supply are described in a new and informative 8-page folder called Bulletin 100.

Included in the bulletin are sectional illustrations with enlarged views of special features, detailed drawings of pumping and distribution systems, and a condensed selection table for horsepower and head—capacity ratings of Verti-Line Pumps.

For all the details, contact Layne &

Strataflo FOOT AND CHECK VALVES

WITH THE

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SILICONE TREATED

Rubber Poppet

They can't stick, They can't leak!

Strataflo Foot and Check Valves end leakage troubles, save wear and tear on pump, save their cost in service calls. Ideal for jet-type pumps. Write for Bulletin 301.

Order from your Jobber

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A Bit's Role Is More Than Making Hole

Any good bit will make hole. It's the ability to make hole longer — by retaining an accurate, uniform shape — that makes Bucyrus-Erie bits first choice among drillers.

Made from selected high-carbon steel billets, Bucyrus-Erie bits have the tensile strength, ductility and hardness needed for maximum resistance to wear. They hold their correct shape longer . . . drill more footage before requiring resharpening. Their extra long body sections give you more sharpenings per bit, too.

You can be sure you're using the best when you use Bucyrus-Erie bits. Catalog No. 654 lists sizes available — write for your copy today. 5A55C

BUCYRUS-ERIE COMPANY
South Milwaukee, Wisconsin

Bowler Pump Co., 2943 Vail Ave., Los Angeles 22, Cal.

Byron Jackson Merges With Borg-Warner Corp.

Byron Jackson Co. stockholders approved a reorganization plan calling for the merger of that company with Borg-Warner Corp. at a recent meeting held at Byron Jackson's offices in California. The merger plan provides that Borg-Warner will exchange four shares of its common stock for each five shares of Byron Jackson.

Well Water Termed Good Cooling Medium

Well water is an excellent medium for cooling in connection with an air conditioning system, the Plumbing and Heating Industries Bureau points out.

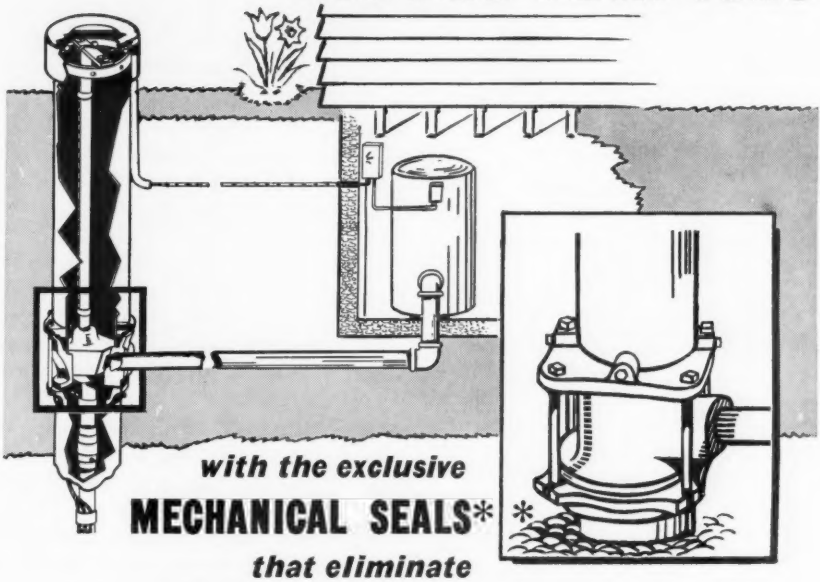
Used in this manner, cold well water is a substitute for mechanical refrigeration. According to the announcement, in most instances the first cost as well as the operating cost of a well water cooling system will be less than if mechanical refrigeration is employed.

The water is pumped from the well by a pump powered by an electric motor. The same pump forces the water through coils. Warm air from the rooms is drawn to the coils by a fan which also forces the cooled air back to the rooms.

Thermostatic control makes the system entirely automatic. The controls start the pump and fan when the room air reaches the point at which cooling is desirable. The only expense involved in the operation of a well-water cooling system is the cost

Williams

PITLESS ADAPTERS



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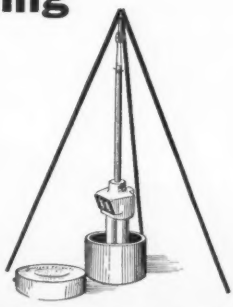
MECHANICAL SEALS*

that eliminate

welding or threading

Here's a tie-in sale that brings extra profit every time you sell a water system. It's good business to sell a complete package, and the complete package includes the modern Williams Pitless Adapter! Simplified, exclusive mechanical seals are easier to install, give positive protection from seepage and contamination. Approved by leading health and sanitation authorities. Shipping weight of less than 50 lbs. saves freight, saves money. Write for the Williams Profit Kit of Literature.



All moving parts immediately accessible without digging!

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Put your customers wise to JENSEN JACKS

JENSEN JACKS are well known all over the world, but your customers may not know that JENSEN JACKS are most reliable . . . and cost so little to buy and operate. Drillers can install and counterbalance JENSEN JACKS easier, faster and more profitably. Write for the facts — put your customers wise to JENSEN JACKS.

END STUFFING BOX TROUBLES
Jensen's Self-Adjusting Stuffing Box stops loss of water . . . easier to repack . . . lasts longer.

JENSEN JACKS

JENSEN BROS. MFG. CO., INC.
1016 Fourteenth Street
Coffeyville, Kansas

of the electricity for the pumping of the water and the operation of the fan.

Dayton Issues Progress Report

The Dayton Pump & Mfg. Co., Dayton, Ohio, recently issued a report covering three years of progress.

Entitled "Everything New Since 1952," the report states that every Rapidayton electric water system, cellar drainer, and water softener has been re-designed over the past three years.

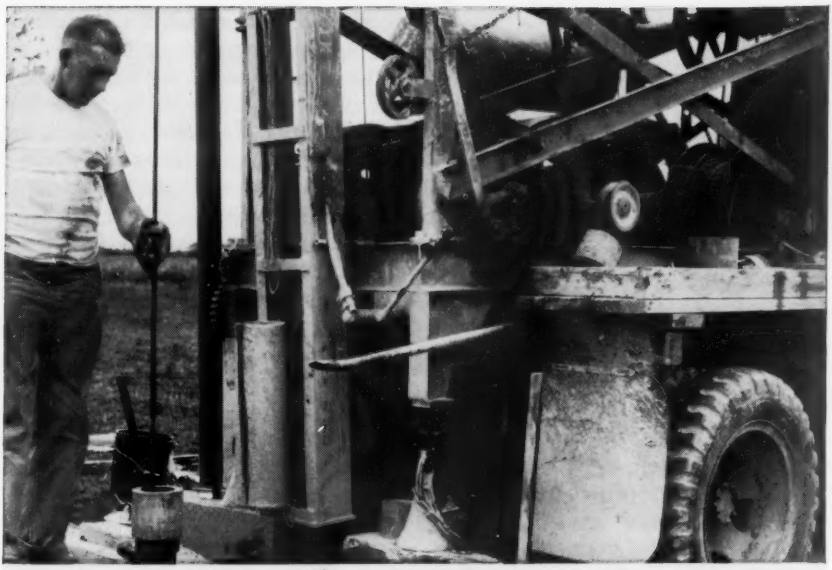
According to the report, the following innovations have taken place: Rapidayton basic designs have been changed, some exclusive features have been added, and shipping cartons are completely new.

Beginning in 1952, the company started the following series of new water systems: the axial flow multistage Super Champion, the piston type Gusher and Super Gusher, the Champion convertible jet, the Signature Champion, the Twin Champion, and a sumbersible called the Nautilus.

Other developments included the use of stainless steel tanks in freshwater systems, a new line of cellar drainers, and a new line of semi-automatic water softeners.

Greene County, N.Y., Ground Water Described

Supplies of ground water adequate for domestic and farm use can be obtained almost anywhere in Greene County, N.Y., from drilled wells penetrating the bedrock, according to a Geological Survey report recently released. This report was prepared in co-operation with the New York



Here's a *long lasting* line!

• It's Tiger Brand Mor-Spring Drilling Line—specially engineered for cable tool water well drilling. It has good shock resistance to stand up under repeated heavy impacts. It wears well even when you're drilling through rock and sand.

These properties all help to make Tiger Brand Mor-Spring Line durable and long lasting. And the longer your line lasts, the *less it costs* per foot of hole.

Drillers have reduced costs as much as 50% with Mor-Spring Line . . . have drilled as much as 24,000 feet of hole with *just one Mor-Spring Line.* For service like that on your rigs, ask specifically for Tiger Brand Mor-Spring Drilling Line.

USS AMERICAN TIGER BRAND MOR-SPRING DRILLING LINES

USS

AMERICAN STEEL & WIRE DIVISION, UNITED STATES STEEL CORPORATION
GENERAL OFFICES: CLEVELAND, OHIO
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UNITED STATES STEEL EXPORT COMPANY, NEW YORK

UNITED STATES STEEL

Water Power and Control Commission as part of a statewide survey of ground-water resources.

The most productive bedrock formation is the Catskill, which underlies the western five-sixths of Greene County. The average yield of wells penetrating the Catskill formation is 20 gpm, and the water is of good chemical quality. The average yields of wells penetrating the other bedrock formations do not exceed 10 gpm, and the water from some may be excessively hard, or high in iron or other undesirable chemical constituents.

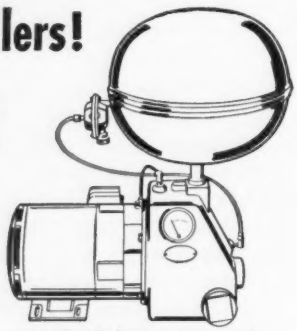
Sand and gravel deposited by streams flowing from the great ice sheet that formerly covered Greene County yield as much or more water to wells as the most productive of the bedrock formations but are not as extensive. The average yield of wells in the sand and gravel is 22 gpm. As most of these wells are not screened, the maximum available supply is not being utilized. On the other hand, the clayey glacial till deposited directly beneath the ice and clays deposited in lakes formed by the melting ice, yield little water to wells drilled in these formations.

Flowing wells and springs are most common in the part of the county underlain by the Catskill formation, but springs are common also in areas in the Hudson Valley underlain by limestone. The limestone areas contain caves and sinks developed along joint cracks and stratafication planes.

Water from springs emerging from the limestone should be regarded with caution, however, as the sinks feeding the springs are occasionally used

opens new market for drillers!

FAIRBANKS-MORSE model H-555



Here's a quick profit-maker that's easily installed. Ideal for offering to resort market, to migratory farm workers, and to families with pitcher pumps wanting old wells resized for electric pump service.

Can be installed for deep or shallow well service—with or without tank. The H-555, with our M-3 tank, is popular both for permanent but limited service, and for summer cottage or camp use.

Send for data sheets ADL540-1 and 540-2; prices, discounts. Write on your letterhead to Fairbanks, Morse & Co., Chicago 5, Ill.

FAIRBANKS-MORSE

a name worth remembering when you want the best

PUMPS • WATER SYSTEMS • GENERATING SETS • MOWERS • SCALES
MAGNETOS • MOTORS • DIESEL LOCOMOTIVES AND ENGINES

as dumps for the disposal of waste, and the water may contain harmful bacteria.

Measurements of water-level fluctuation in a well unaffected by heavy pumping were made over a period of nine years. These measurements show an annual decline of water level during the summer and fall, which is believed to be due to lack of recharge owing to the extensive use of water by vegetation during this part of the year. However, these annual fluctuations over a period of years stay within approximately the same limits, and there is no indication of either a general rise or a general decline of the water table.

The average daily withdrawal of ground water in the county is estimated at approximately two million gallons. By far the largest part of this is utilized for domestic and stock purposes. Commercial establishments, including a relatively large number of tourist resorts, are the second largest consumers of ground water. The withdrawal is even higher during the period from May through September.

The county is not heavily industrialized, and less than 10% of the average municipal pumpage is groundwater supplied.

Data on which the report is based are given in tables, which include records of approximately 315 wells and springs, logs of selected wells, and chemical analyses of water from 49 sources.

The report is entitled "Groundwater resources of Greene County, N. Y." Pending publication, typewritten copies may be inspected at the Geological Survey, 332 Federal Bldg., Albany, N. Y., 230 Old Country Road, Mineola, Long Island, N. Y.,

(Continued on page 40)

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- **SPINKS Gleason**—easy-mixing; washes out of water bearing formations quickly! Makes heavy mud in 9.5 lb. to 10 lb. range; stops unconsolidated formation cave-ins! Excellent lubrication properties; proper viscosity for removing cuttings quickly, thoroughly! Durably sacked in water-repellent asphalt lined bags! Convenient 50 lb. size.
- **SPINK-Gel**—high yielding, finest quality Wyoming bentonite. Low water loss! Exceptional lubricating qualities! Requires little to make viscous mud that floats cuttings.
- **SPINK-O**—medium weight mud, low filter loss! Combines outstanding qualities of Gleason and Spink-Gel. Get the job done quicker . . . more economically with Spinks!

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Please Contact Our Nearest Office

HC *The* **Quality Brand** **HC**

from the MAILBAG

This page is open to any of our readers having questions to ask relating to drilling, driving pipe, dressing bits, etc. All letters will be answered promptly by experienced drillers and engineers, who are qualified to give intelligent advice on these subjects. We will publish as many letters of general interest as space will permit. Address: The Driller, South Milwaukee, Wis.

Asks Advice on Acid-resisting Casing

Dear Sir:

I have the contract to drill here in Hot Springs and am wondering if you could give me some information on what kind of casing I should use, or if there is any acid-resistant casing. Two wells have already been drilled on this property. The casing will not hold up because of the strong acid in the water. The acid has to be cased off and one has to go deeper for sure water.

As there is no casing here that will do, I thought you might have a suggestion.

Yours truly,

H. B. Arkansas

Dear Sir:

It is true that in some localities there are highly mineralized waters underground which have a corrosive action on ordinary wrought steel casing or pipe. It was this kind of pipe, we presume, that was used in the wells you mentioned.

There are two courses open to prevent, or at least reduce corrosion. One is to use casing or pipe made of corrosion resistant material. The other course is to protect the pipe or casing from the corrosive water by means of mud-laden fluid or cement.

By corrosion resistant material we mean coatings of asphalt, tar and similar preparations, preferably of the type that are applied hot on a clean surface. There are a number of satisfactory asphaltic compounds available for coating pipes. The usual method is to dip the pipe in a vertical position with the bath about 300° Fahrenheit; the coating should be at least 1/32 of an inch in thickness. Coatings are not expected to prevent all corrosion, for no matter how well done, there may be pin holes or the coating may be damaged in handling. However, they have proven helpful in many cases.

Protecting the inner casing or pipe by a cement grouting to shut off mineralized water may also be a solution to your problem. Genuine wrought iron casing or casing made of cast iron should prove more satisfactory than ordinary wrought steel casing or pipe.

"We might want to drill another one ourselves, sometime . . . mind if I watch?"

meet

KEN NICHOLLS

EXECUTIVE VICE PRESIDENT

SUMO PUMPS INC.
308 Atlantic Street
Stamford, Conn.

Fireside 8-7551

"...let's get together at the NWWA Convention November 15"

BOOTHS 100 and 101
NWWA EXPOSITION
Long Beach, Calif.

"If you're planning to take in the Exposition, don't forget to stop by the SUMO booth. I'll be there to greet you and our many other well driller friends and to give you the facts on the great SUMO submersible line which extends from ⅓ hp through 30 hp."

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SUMO PUMPS INC. 308 Atlantic St., Stamford, Conn.

THE ONLY PUMP MANUFACTURER TO CONCENTRATE 100% ON SUBMERSIBLES FOR WATER WELLS

News...

(Continued from page 37)

and Room 1242-G, General Services Bldg., 18th and F Sts., NW., Washington, D. C.

Ground-water Levels Decline in New Mexico

Following the pattern of declining ground-water levels in most of the state of New Mexico, ground-water levels declined to new record lows in most wells in the Grants-Bluewater area during 1954.

The statement was based on measurements of water levels made in observation wells by the Geological Survey in co-operation with the state engineer of New Mexico.

In 1954, as in 1953, water from Bluewater Lake was deficient and all irrigation water was obtained from wells. However, the net decline in water levels was considerably less in 1954 than 1953, largely as a result of greater precipitation during the 1954 growing season.

Rapid rises and declines of groundwater levels and rapid spread of the effects of pumping from one well to another are characteristic of the area north of Bluewater. The area southeast from Bluewater to near Grants is characterized by smaller pumping effects, smaller fluctuations in groundwater levels, and small response to recharge and discharge.

Since 1946, the first year of record, water levels have declined approximately 45 feet under the area northwest of Bluewater, and about 20 feet under the irrigated area southeast of Bluewater.

A tabulation of annual water-level measurements made in January 1955 is on file in the offices of the state engineer at Santa Fe, Roswell, and Deming, N.M.; the county agent at Los Lunas, N.M.; and the Geological Survey, Room 1242-G General Services Administration Bldg., 18th and F Sts., NW., Washington, D. C., and Room 279, Geology Bldg., University of New Mexico, Albuquerque.

From the State Associations

Colorado

The Colorado Water Well Contractors Association will hold its annual convention Nov. 4 and 5 at the Shirley-Savoy Hotel in Denver. Twenty-eight display spaces will be provided in the Empire Room of the hotel to accommodate firms interested in showing their products.

Kansas

The annual Kansas Water Well Drillers Association meeting will be held Oct. 21 and 22 at The American Legion Home in Salina. Both indoor and outdoor display spaces are to be provided for manufacturers and suppliers.

Virginia

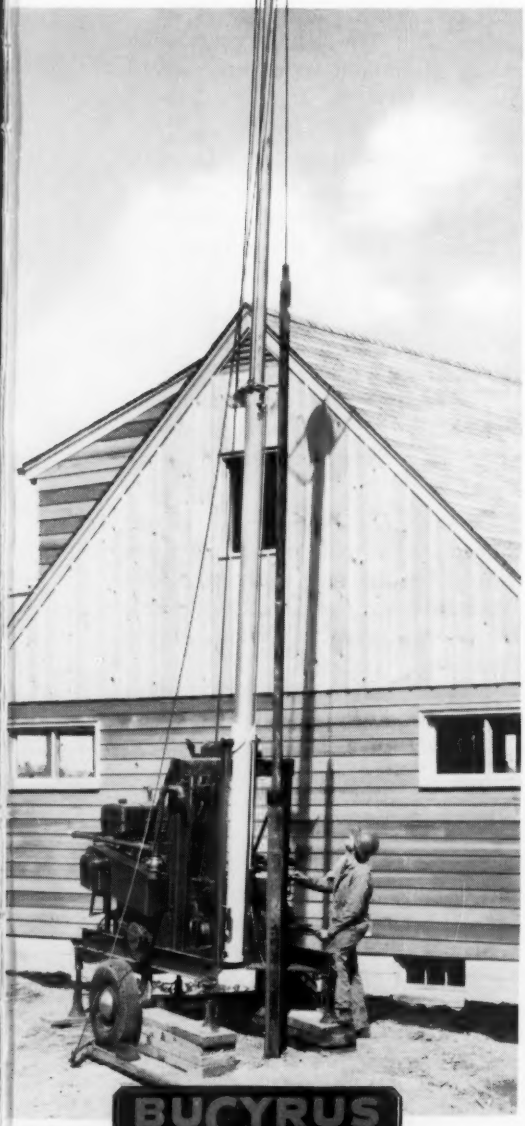
The Virginia Water Well Drillers Association held its annual meeting at the Wm. Byrd Hotel in Richmond Sept. 20.

The terms of the following directors expired on that date: Justin C. Ange, D. C. Magette, and W. T. Stevens, Jr. The meeting was called to elect these directors to serve for three years and for the board of directors to elect the officers to serve for the ensuing year.

In addition, officers made their an-

(Continued on page 44)

It's Compact and Lightweight But there's Plenty of Power In the New 1-W Cable Tool Drill



That's right! This neat little rig was custom built to drill 2- to 4-in. wells more profitably. Quickly transported between locations, it sets up fast, completes the work in a hurry. Its telescoping tubular-type derrick is power-raised and extended — no braces are required.

The 1-W's drilling mechanism is hydraulically powered. Time will unquestionably mark this device as the greatest engineering advance in drill design of the past 50 years. This device affords a free-fall, high-speed drilling motion and permits the operator to select any desired stroke length from 12- to 24-inches while drilling. In addition, the hammer reel is especially designed to enable the operator to drill and drive casing simultaneously. It's ideal, too, for recovering or bumping back casing.

This drill can be mounted on a ¾ or 1-ton truck, or it can be two-wheel trailer mounted for towing behind a truck at highway speeds. Depth capacity for cable tool drilling ranges from 225 feet for 4-in. diameter hole to 315 feet of 2-in. hole. Maximum cable tool weight is 500 pounds.

Besides cable tool drilling, the 1-W may be equipped for:

- ★ HOLLOW ROD DRILLING
- ★ ROTARY DRILLING
- ★ JETTING
- ★ TEST HOLE DRILLING
- ★ WELL SERVICING

Let the new 1-W drill put more profit in your small well work. Write today for full details. 35W55C

BUCYRUS ERIE

South Milwaukee, Wisconsin

FIRST with the FINEST in Water Well Drills

BITS *from the wit sharpener*

A feller was practicing on his saxophone late at night when the landlord came in.

"Do you know there's a little old lady sick upstairs?" asked the landlord.

"No," answered the feller. "Hum a little of it."

A fat dowager in a crowded bus trod upon the foot of an irate gent who was trying to read his newspaper. "Madam," he said coldly, "Will you kindly get off my foot."

"Put your foot where it belongs," she said sharply.

"Don't tempt me madam, don't tempt me."

Teacher: "How do you spell Mississippi?"

Bright boy: "You want the river or the state?"

Bars are something which, if you go into too many of, you are apt to come out singing a few of, and maybe land behind some of.

"I feel like taking that beautiful blonde out again tonight."

"Have you taken her out before?"

"Well, no. But I felt like it once before."

"Mr. Jones, can Daddy borrow your corkscrew?"

"Sure thing, Johnny. Just run along back home and tell him I'll bring it right over.

Young lady: "Why do you close your eyes when you drink?"

Driller: "The sight of good liquor makes my mouth water, and lady, I like mine *straight.*"

A driller putting child to bed: "Now what are you crying for?"

Small Son: "I wanna drink."

Dad: "So do I. Go to sleep."

An old Indian took his watch to be repaired. When the jeweler took the back off, a dead bug fell out.

The Indian, astonished, exclaimed: Ugh! . . . No wonder watch stopped . . . engineer dead!"

Five-year-old Nancy was having dinner at the home of her playmate. When she saw the family bow their heads for grace, she turned to her little hostess and asked: "What are you doing?"

"We're giving thanks for our daily bread," her little playmate explained. "Don't you give thanks at home?"

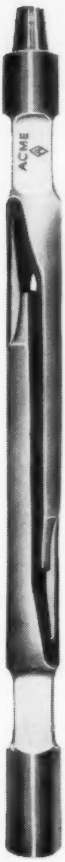
"Naw," replied Nancy. "We pay for our bread!"

"Aha. And how is it I find you kissing my daughter?" stormed the irate father. "How is it, sir?"

"Great. Just Great!" replied the young hopeful.

Marriage teaches a man thrift, regularity, abstinence, and many other splendid virtues he wouldn't even need if he stayed single.

Greatest Name in Cable Tools



Acme

TRUSTWORTHY SINCE 1900

Acme Alloy Jars

Backed by Acme's 54 years experience as manufacturers of highest quality cable tools, the Acme Alloy Rein Type Drilling Jars are designed, forged, heat treated and finished to give maximum strength and to withstand the shock of constant jarring without fatigue failure, and most important, to give extra wear to establish jar drilling records surpassing any now on record.

Acme Alloy Rein Type Drilling Jars are made for water well drillers to API specifications in the following sizes:

5½" Dia. with 3¾" API Joints
4¾" Dia. with 3¼" API Joints
4⅜" Dia. with 3" API Joints
3⅝" Dia. with 2⅝" API Joints
3¼" Dia. with 2¼" API Joints

Order through your local supply company

Fig. 107AA
Acme
Alloy
Drill
Jars

Write for free copy 36-page (1955 edition) Catalog and tool-use Manual — designed and packed with especially valuable information for Water Well Drillers.

To-be-Sure —Always: Order Acme's

You get more of EVERYTHING needed in Acme Tools—100 are shown in new Catalog.

Acme Fishing Tool Co.

PARKERSBURG, W. VA.

EXPORT OFFICE:
Stardrill-Keystone Co., Beaver Falls, Pa.

ACME DRILLING & FISHING TOOLS
Since 1900

News...

(Continued from page 40)

nual reports, directors reported their activities and the meeting was open for discussion on all matters pertaining to the welfare of the association.

Lower...

(Continued from page 15)

den above, he figured, was simply seeping in under the bottom of the casing. He came in with his 22-W, set up over the well hole, and drove the casing down only 12 inches before it was firmly seated in hard shale just over the bedrock. That sealed off the trouble, and the man has had none since. Today he is one of Lower's staunchest supporters.

By operating ethically, by giving his drillers every incentive to make excellent money by doing guaranteed work, and by judicious use of advertising, Lower is forging steadily ahead in the well drilling business. Late this summer, for example, at the county fair in Springfield, Lower intended to bring in one of his newest 22-Ws, give it a cleaning with the steam jenny in his shop (this is a usual routine repair procedure) and freshen it up with a new coat of paint. This machine was to be put on exhibition at the county fair. The end result should be a great deal of interest exhibited in Lower's behalf, which is good, because the interest and trust of any community in a well driller's competence is exactly what keeps water well drillers in business from year to year. And R. E. Lower is keenly aware of this fact.

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5 5/8"	&	6"
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All advertising in this section is payable in advance. Enclose your check or money order with copy. Rate: 60c per line. Minimum charge $2.40. No discounts; no commissions. Count your own copy to avoid delay. The average line contains 28 characters (20 characters if all capital letters are used). Count spaces and punctuation as one character each. Allow 10 characters for box number if blind advertisement is desired. Closing date — 10th of preceding month. Example — January issue closes December 10th. Be sure to address separate inquires to each advertiser by using the correct box numbers. Mail Box inquires care of THE DRILLER, South Milwaukee, Wis.

DRILLS FOR SALE

Bucyrus-Erie 36-L: One old style trailer mounted; one new style skid mounted; both rigs complete with all tools and equipment; priced at bargain for quick sale. B. J. Jones, 1101 West Payne, Olney, Texas.

Bucyrus-Erie 22-W equipped with blower, rubber cushioned heel and spudding sheaves, tool guide; 500′ ¾″ drill cable, 500′ sand line and complete tools for drilling 6″ holes, machine mounted on 6 x 6 Army truck, price: $4500. C. DeWitt & Sons, Washingtonville, New York, Phone: 6671.

Keystone driller model 70 special, excellent condition, completely outfitted for business. Connecticut. Box 582

22-W Bucyrus-Erie complete with spooling device, casing reel and power derrick hoist, mounted on two ton Reo truck; good condition; priced to sell.

#1½ steel frame Keystone drill; self propelled; Waukesha engine. H. A. Butler, P. O. Box 96, Delafield, Wis., Phone: 33.

DRILLS FOR SALE

20-W mounted on 1944 GMC 1½ ton truck; 1952 model drill #90134; price: $3300. John Keidel, RD #3, Lakewood, N.J., Phone: LA 6-2254-M-2.

#6 Ideco drilling machine, five years old, mounted on 1946 model 1½ ton Chevrolet truck.

Homemade machine mounted on a 1939 International 1½ ton truck. Both machines in operating condition, price: $2700 for both. Rite-Way drilling Co., Willow Spring, Illinois, Phone: 2728.

21-W mounted 1940 V-8 Ford truck; new Leroy engine; equipped with tool guide, $2500 with tools and lines, located in Pa. Box 618

240 Star mounted on 1946 V-8 Ford truck, complete 4″ tools; good condition, price: $5000. Earl F. Long, Rehrersburg, Pennsylvania, Phone: 52R 2 Frystown.

1955 60-L Bucyrus-Erie trailer mounted, casing tackle strut, 1000 feet new line, working Staunton, Ill. area. Dale Lambert, 2033 37 St., Rock Island, Ill. 85330, or R. R. Long, Jacksonville 512.

Rotary water well rig, shop built, all steel, trailer mounted, 32′ mast, 22′ Kelly, tool joint, bits 5″ to 30, priced cheap. S. J. Catlett, 2408 Main, Woodward, Okla., Phone 797-J.

#37 Sullivan mounted on 1947 Ford, 4½ x 6 G-D mud pump; used very little, $7000.

Model (S) United Geophysical rotary, 4 x 5 G-D mud pump; good cond., $4000. These prices do not include drill pipe or hand tools. Wilcox Drilling Co., P. O. Box 569, McMinnville, Ore., Phone: 8824.

DRILLS FOR SALE

Failing rotary drill complete with drill stem & tools, ready to go; mounted on 1951 Ford FSV-8; water truck, Griffin tank, front end winch, 2 speed axle, mud tires A-1 condition, 1952 Ford. This unit a bargain for water well, test hole, shot hole or core drilling at $5500. H. V. Hueppelsheuser, 822 E. Maple, Enid, Oklahoma. Office: So. Highway 81, Phone: AD7-2690.

#42 Cyclone 1947 model, 32′ telescope derrick, power hoist, cathead, Red Seal Continental motor, self starter; 200′ ⅝″ drill cable, 400′ ⅜″ sand line; 1948 Ford truck two speed rear axle, all in good condition; $2600; without truck: $2400. John Stoepfel, Kalida, Ohio, Phone 6-5, Mail Route 4, Ottawa, Ohio.

21-W Bucyrus-Erie, completely overhauled, wire lines, and tools, mounted on a 4 x 4 Chevrolet truck with winch; excellent condition. Herbert Ferris, Rt. 1, Box 394 Newtown, Ohio, Phone: Beechmont 1-4626.

Keystone #74 spudder; rebuilt, repainted, mounted on 6 x 6. J. L. Dunn, R.D. #4, Washington, Pa.

#50 Armstrong all steel rig good for 1400 feet, to swap for all steel rig good for 500 feet; must be in fair shape. W. N. Robinson, Wakefield, Ohio.

Bucyrus-Erie 36-L semi-trailer mounted; tools 12″ down; 30′ skid holds all stems and bailers; also API dog house, 750 gal. propane tank, Kohler light plant; rig floor skid, and forge skid, holds bits, jars, fishing tools and casing tools; this rig complete with Int. winch truck and semi-trailer; a real bargain $21,000. Box 818, Shawnee, Oklahoma.

DRILLS FOR SALE

Rig like Bucyrus-Erie 22-W mounted on Chev. truck; with tools for 8, 7 and 5" holes; also 2000' of ¾" drill line, $2300. R. Hennig, Princeton, Ind., Phone: 1307B.

Bucyrus-Erie 24-L drill rig, semi-trailer, in good condition, standard equipment; price right. Shawver Well Co., Fredericksburg, Iowa, Phone: 114.

All steel custom built rig with tools mounted on 1946 Studebaker; A-1 condition; $900 cash Herschel Mourning, Colchester, Illinois.

Furgeson well drilling machine, truck mounted with cable; John Deere motor, fair condition, $400. Ervin Halverson, Rake, Iowa.

Two 36-L spudders, two years old equipped with Cummings diesel engines, A-Frame, line tension clamp, tool crane and cable spool drive; may be purchased with or without tools, to drill from 13" to 5" hole including lighting plants; price reasonable for quick sale. R. L. McPherson, 88 Thompson Blvd., Riverside, Ontario, Phone: Windsor. Whitehall 59762 or Tillsonburg Pipe and Supply Co., Ltd., Tillsonburg, Ontario, Phone: 437.

#33 Armstrong well drilling machine in good condition; mounted on 1945 cab over Ford truck with new engine; machine powered by Allis-Chalmers motor, with 600' of new ¾" drill line and 600' of ⅝" sand line; price $2000. Nelson Bros., Decorah, Iowa.

MISCELLANEOUS

New and used pipe and casing 2" to 8", used well drillers; write for new price list. Thomas H. Scheuren, 933 Fern Avenue, Reading, Pennsylvania, Phone: 41287

MISCELLANEOUS

Bucyrus-Erie 22-T blast hole drill; purchased new 1952; 34' 6" one-piece derrick; gasoline engine driven with electric starter; 22-W bull reel; perfect condition.

Loomis clipper #44 crawler mounted, gasoline engine driven; both machines immediately available. Kermit Snyder, Deer Lake, Pine Blvd., Orwigsburg, Pa., Phone: Orwigsburg 6-8221.

Special Offering: New 8" and 6" drilling bits approx. 5' lengths with 2" x 3" —7 API pins, manufactured by Star Drilling Machine Co., shipped prepaid. For quotations write Degen Pipe & Supply Co., 4900 Sapulpa Rd., Tulsa, Okla.

Bucyrus-Erie tools, all same joint size, brand new, never used: Two 8" bits, 2¼ x 3¼": $125. Drill jars, 4¾" dia., 7" str. $195. Swivel wire rope socket w/ mandrel: $67. 4" x 12' drill stem: $115 Set 3½" claw end tool wrenches: $62. C. K. Schmudlach, Fredericksburg, Iowa.

New pipe casing in stock: 3", 4", 6", 8", 10", 12". Reconditioned pipe casing in stock: 3", 4", 4½", 5", 6", 8", 10", 12". Cutting and threading facilities; attractive prices on request. H. Schwartz & Sons, 2235 North Bodine St., Phila., Pa., Garfield 6-6464.

Four G.E. electric driven welders, 400 amp, 2 yrs. old, like new; price: $200 each. Three each 61E Beaver geared pipe threaders, 2½ to 6", $100 each. One each No. 90-E Beaver, 9 to 12", $200. Toledo No. 4 geared threader, 10 to 12", $200. These threaders are all late models, like new. J. Bucci, 4001 Perkiomen Ave., Reading, Pa., Phone: 25634.

HELP WANTED

Wanted: One driller for work in and around Stillwater, Minnesota. Mantyla Well Company, Stillwater, Minnesota, Phone: Cottage Grove 2311.

Wanted: Drill operator; Bucyrus-Erie equipment, mostly 6" work; must have experience in sand and gravel; steady work, wages and bonus on footage drilled. H. A. Butler, Delafield, Wis.

POSITION WANTED

Sober, reliable man with over 30 years experience drilling on both cable and rotary tools wants job; either wages, footage or both. Box 575

WELL BUSINESS FOR SALE

Pennsylvania drilling & pump business for sale; all equipment, tools and machines; also five room home and shop fully equipped with tools, compressors, etc., located in So. Eastern Pa., priced to sell. Box 619

Well established drilling, pump and irrigation business; modern building on one acre of land, located on main highway in fast growing farm area; two 24-L Bucyrus-Erie, one 71 Star all with tools; three pump pulling rigs, trucks, pickups, four arc welders trailer mounted, test pumps and compressors and shop equipment all in first class working order. J. D. Hamilton, P. O. Box 438, Chula Vista, Calif.

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Introducing . . . the new Star performer for the deep well field!

UNIVERSAL Sta-Prime

RUGGED NEW MULTI-STAGE PUMP FOR WELLS TO 300 FEET

- Provides up to 1100 gals. per hr.—far greater capacity than from normal multi-stage jet pumps.
- Operates at peak capacity regardless of changing water levels. No manual control valve to adjust. Fully automatic.
- Unaffected by air or gas in well water—both are separated in pressure tank so that unit will not lose prime once it is primed.
- Available with patented twin-check valve assembly which converts pump to an automatic self-priming unit.

See it demonstrated at the N.W.W.A. Convention at Long Beach Nov. 15-19

Recommend UNIVERSAL Pumps

THE RUGGED PUMP FOR RUGGED JOBS

UNIVERSAL MFG. CO.

Eastshore Highway • Richmond, California
Hoffmeister Avenue • St. Louis 23, Missouri

Here is part of the outdoor display of the Southwestern Water Well Exposition held July 28-30 in Houston, Texas. Both indoor and outdoor displays were held at the Public High School Stadium in Houston, while meetings were held in buildings on the University of Houston Campus.

The Driller

The monthly magazine for water well drillers

South Milwaukee, Wisconsin

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